

FLAVIIR

INNOVATION THROUGH PARTNERSHIP

THE FLAVIIR PROJECT

The FLAVIIR project is a 5 year, £6.5M research programme looking at technologies for a future Unmanned Air vehicle (UAV) funded jointly by BAE Systems and EPSRC.

Managed by BAE Systems and including 10 University partners, the programme covers all the key aspects of the next generation UAV from an aeronautical point of view. The focus (or "Grand Challenge") for the research is to develop technologies for a maintenance-free, low cost UAV without conventional control surfaces and without performance penalty over conventional aircraft.

The FLAVIIR project forms parts of the BAE Systems strategy to concentrate its

funding on a few selected universities, to increase company involvement in these university programmes, to facilitate a greater degree for cooperation between university partners and to include system integration into the research agenda. Future UAVs will be necessarily cheaper, more modular and will rely on designs that consider many cross-discipline interactions and trade-offs. The FLAVIIR programme, and others like it, is therefore necessary to ensure that BAE Systems understands both the emerging technologies and how they can fit together to deliver suitable systems in the future.

Alongside the research into individual technologies themselves (these being Aerodynamics, Control Systems,

Electromagnetics, Manufacturing, Materials/Structures and Numerical Simulation), the FLAVIIR project will also deliver flying demonstrator vehicles for these new advances, thus applying the research methodology to the integration phase and providing direct experience and evidence of real performance benefit.

The focus on building and flying demonstrators ensures that not only are the various technologies developed further than would be considered normal at a university, but also that the inter disciplinary interaction between different universities (and single university departments too) is enhanced. Both of these provide great benefit to the overall outcome.

The Universities partners involved in FLAVIIR are: Cranfield University, Imperial College of Science, Technology and Medicine, the University of Leicester, The University of Liverpool, The University of Manchester, The University of Nottingham, The University of Southampton, The University of Wales, Swansea, The University of Warwick and the University of York.

For more information look at www.flaviir.com or contact philip.woods@baesystems.com

FLAVIIR – A BAE SYSTEMS – UNIVERSITY PARTNERSHIP DEMONSTRATING NEW TECHNOLOGY FOR UAVS

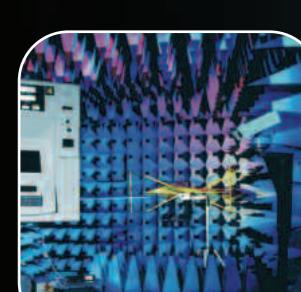


Electrically activated surface deformations to control separation

Circulation control system – blown air from the trailing edge

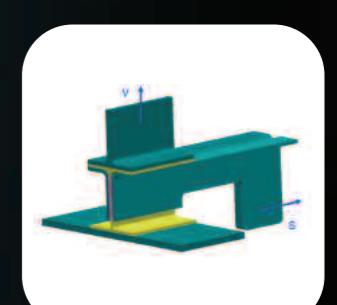


Main jet thrust vectoring using secondary coanda jets



Predicting susceptibility to pulsed RF threats

Manufacturing and tooling methods designed for low cost production and through life costs



Fast prediction methods for carbon composite structures including delamination and failure

Concept design tools incorporating new technologies including cost analysis

TECHNOLOGIES DEVELOPED WITHIN FLAVIIR WILL BE DEMONSTRATED IN FLIGHT ON A UAV SIMILAR TO THIS ECLIPSE CRAFT